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AUTHOR Viehland, Dennis W.: And Others
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ABSTRACT

The emerging trend in state higher education finance policy to use and index to establish tuition and fee levels at public institutions was studied, based on a 1980 national survey of tuition-setting policies. It was found that, increasingly, states are adopting indexing to cost of education as an established policy for determining tuition: 14 states index tuition to the cost of education, 3 states index tuition to a specific measure, 30 states do not have an established policy for determining tuition but seem to use incremental pricing, and 3 states have established policies, but use no particular formula to determine tuition. When determining the cost of education according to set accounting practices and charging students a set percentage of this cost, the indexing system must consider: the elements that should be included in the computation of the cost of education or instruction: whether the cost of education should be computed by student level: what percentage of costs should be passed on to students in the form of tuition: and whether percentage charged should vary by student residency or by type of institution. It is suggested that a policy that sets tuition by use of an index has implications for state budgeting, planning, and student enrollment. Indexing tends to curtail institutional control over the amount of money generated from tuition and also to decrease budgetary flexibility in the use of these revenues at the campus level. It is possible that if tuition is indexed to costs that are rapidly increasing, the resulting tuition increases may contribute to enrollment declines. Administrators may also be burdened with the need to conduct annual studies to determine per student instructional or educational costs. Additional concerns include whether students at different institutions are being treated equitably and whether access to higher education is affected by tuition rates based on costing. (SW)

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# INDEXING TUITION TO COST OF EDUCATION:

# THE IMPACT ON STUDENTS AND INSTITUTIONS

Dennis W. Viehland
Research Assistant
Western Interstate Commission
for Higher Education
P.O. Drawer P
Boulder, Colorado 80302
(303) 497-0223

Norman S. Kaufman
Senior Staff Associate
Western Interstate Commission
for Higher Education
P.O. Drawer P
Boulder, Colorado 80302
(303) 497-0221

Barbara M. Krauth
Staff Associate
Western Interstate Commission
for Higher Education
P.O. Drawer P
Boulder, Colorado 80302
(303) 497-0222

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Mary Corcoran
University of Minnesota
(Editor, AIR Forum Publications)

# INDEXING TUITION TO COST OF EDUCATION: THE IMPACT ON STUDENTS AND INSTITUTIONS


## Abstract

This study examines an emerging trend in state higher education finance policy, the use of an index to establish tuition and fee levels at public institutions. Based on a national survey of tuition setting policies, this study documents the increasing use of an indexing formula to determine tuition levels. Factors encouraging this trend are examined and questions that must be addressed by state and institutional policy makers in adopting such a formula are discussed. Policy implications for states and institutions are also considered.

# INDEXING TUITION TO COST OF EDUCATION: THE IMPACT ON STUDENTS AND INSTITUTIONS

For a variety of reasons, the policies used to set tuition[1] levels at public higher education institutions are changing. The traditional "incremental pricing" method of determining tuition and fees is being reconsidered in favor of specific pricing formulas, especially an index to the cost of education. The attraction of this approach arises from a number of causes, including the upward pressure on tuition created by changing demographic and fiscal conditions, and from the desire of legislatures and governing bodies to impose uniformity across institutions.

## Impact of Declining Enrollments and Fiscal Constraints on Tuition

The demographic outlook for higher education is irrefutable. The size of the traditional college-age cohort is growing smaller. Nationally, the number of high school graduates is expected to decline by 18 percent by 1986 and 26 percent by 1991 (Western Interstate Commission for Higher Education, 1979). Although a number of factors influence college enrollments, most projections forecast declining enrollments for higher education (Centra, 1980; Frances, 1980). The relationship of enrollment to tuition income is a positive one, and it is apparent that in order to maintain current levels of tuition income in a period of declining enrollments, student charges will have to increase. Further, at the same time enrollments decline, institutional costs will not. Costs for higher education institutions will rise not only due to inflation, increased maintenance, or higher energy prices, but also from the diseconomy of scale--a decreasing student population with rising fixed costs will result in increasing costs per student. Consequently, declining enrollments and increasing

costs threaten a one-two punch on student charges--fewer students paying heftier fees.

Changing fiscal conditions within the states and the U.S. as a whole will also tend to increase tuition levels. The vulnerability of tuition to pressures of the economy is illustrated by three factors. First, public higher education is highly dependent upon state appropriations. In fiscal year 1977, tuition and fees accounted for only 16 percent of the educational and general revenues of public colleges and universities; 59 percent of these revenues came from state and local appropriations. Second, higher education appropriations are a major component of total state appropriations, second only to elementary and secondary education in most states. Thus, cutbacks in state appropriations, even if distributed evenly among all state recipients, will have a sizable impact on higher education. Finally, tuition is usually viewed as the balance between operating budget requirements and state or local appropriations. As a result, when state or local government revenues are restricted, states will seek increased revenues from other sources, including tuition and fees for higher education.

Although both changing demographics and fiscal constraints point toward higher tuition, the latter appears to be more decisive in pushing up tuition. A study of factors affecting tuition, by Rusk and Leslie (1978), found that:

> Tuition prices and price increases tend clearly to be higher where the state effort is insufficient to the financial obligations of the institutions. Indeed, of the manipulable variables studied, adjusting state appropriations seems to be the major way to affect tuition levels. State policymakers should be aware of this fact not only for the value of achieving desired outcomes, but also for

the knowledge that appropriations shortfalls will raise tuition prices just as surely as if the prices had been raised by the legislators themselves. (p. 544)

Additionally, recent surveys of American public opinion have revealed surprisingly strong sentiments to curtail public higher education budgets before other public services when state revenues are reduced (Advisory Commission on Intergovernmental Relations, 1980).

Opposed to these forces, however, are others that work to keep tuition levels as low as possible. Included among these are historical commitments to low student charges, the political sensitivity of elected officials, and a recognition of the social benefits of higher education. In the absence of an explicit affirmation of these considerations, however, tuition setting is likely to be viewed purely as a fiscal matter--and thus vulnerable to the demographic and fiscal pressures just discussed.

Current State Policies for Determining Tuition

In October 1980 the authors surveyed the state higher education executive officer (SHEEO) in each state to ascertain the policy (if any) currently being used to determine tuition levels. We found that 30 of the states do not have an established policy for determining tuition. In most of these states tuition is determined in an ad hoc manner that might best be described as incremental pricing. By incremental pricing, we mean that current tuition levels are adjusted upward in light of inflation, traditional practices, enrollment changes, state appropriations, and whatever other factors are deemed relevant by the decision makers.

Three of the states have established policies, but use no particular formula to determine tuition. In these states, there is a written and

formally approved statement of the factors to be considered in determining tuition levels, but no specific formula is used.

Seventeen states have established policies that index tuition to a specific measure. Kentucky indexes tuition to charges at comparable institutions in other states, and Illinois uses the Higher Education Price Index as the indexing tool. In Montana nonresident tuition is referenced to the cost of instruction. (Cost of instruction is defined as instruction and academic support costs; it is distinguished from cost of education, which includes these costs plus institutional support, student services, plant, and other "educational" costs.)

The 14 states that index tuition to the cost of education represent an increase since 1976, when the Washington State Council for Postsecondary Education identified 6 states that used this method (1976a). The 6 states identified in that study were Colorado, Florida, Kansas, New Hampshire (nonresident tuition only), Oregon, and Wisconsin. To these are now added the states of Arizona, Maine, New Jersey, Ohio, Oklahoma, Virginia, and Washington. In addition, the state of Massachusetts determines nonresident tuition by indexing it to educational costs although the state has no established policy for setting resident student charges.

Our survey also asked the SHEEOs if their state was considering a change in the current policy and if so what was being considered as an alternative policy. These results indicate that most states are not now considering a change in their tuition setting process. Of the 12 states that are considering a change, indexing tuition to educational costs was listed by 5 states (Georgia, Massachusetts (resident tuition), Minnesota, Mississippi, and Missouri) as the alternative policy under consideration.

Appeal of the Index to Cost of Education Method

The survey results outlined in the previous section indicated that, increasingly, states are adopting indexing to cost of education as an established policy for determining tuition. Several explanations for this trend are possible.

Most obvious is the fact that relating tuition to educational costs rationalizes tuition policy. In states that do not have established policies for determining tuition there is little justification for why student charges are what they are. A state's adoption of an indexing policy and, even more importantly, the specification of the percentages to be used provides an explicit declaration of what portion of educational costs the student is expected to assume.

The use of an index in establishing tuition is also a means to "routinize" the process, which appeals to decision makers at all levels. Meisinger (1976) observes that:

> It is unusual for a decisionmaker not to seek some means to routinize the process of making decisions, especially in those situations which recur frequently. This need to simplify is a driving force underlying the behavior of most budgeters . . . . If the budgeter can develop a decisionmaking framework which will enable him to make essentially the same kind of decision this year as last year in only a fraction of the time and with only a fraction of the effort, he will be able to make his job much simpler. The budgeter needs a decision rule which will serve as a basis for agreement in dealing with competitive interests. (p. 1)

Expressing tuition as a share of educational costs also creates a tighter link between tuition and overall state support. The policy is likely to be legislatively determined, and the tuition received is likely to be considered state income rather than institutional income. The concepts involved in the use of a formula to determine tuition are consistent with those used in formula budgeting to establish state appropriations in many states. Indeed, most states that index tuition to education costs also use formula budgeting.

Indexing insures that a fixed portion of cost increases will be covered from student sources. This appeals to a number of constituencies: Legislators may like the fact that a formula for setting tuition passes along a specified portion of annual cost increases to the student. The attraction for educators is that increases in tuition revenue are gradual and planned rather than sudden and in response to short-term revenue shortfalls. In times of increasing fiscal constraints on state government, indexing also may be viewed as a method of "shielding" tuition from increases as state support wanes. In inflationary times, indexing may appeal to students and parents as well. Carol Van Alstyne (1977) has pointed out that:

> Relating tuition to costs could in effect put a ceiling on the share that students and their families are expected to bear because, in inflationary times, tuition shares of costs have often increased more than proportionately as other sources of support have lagged. (p. 76)

## Considerations in Establishing Indexing Formulas

Indexing tuition to the cost of education is a straightforward, technically objective process: The cost of education is determined according

to set accounting practices, and the student is charged a set percentage of this cost. Developing the policy, however, requires making a number of subjective decisions. The following discussion examines some of the questions that must be addressed in order to initiate an indexing system.

What elements should be included in the computation of the cost of education or instruction? Cost of instruction computations usually include on-campus instruction, plus a percentage of academic support costs. Cost of education is a broader term that also includes all or major portions of student services expenditures, institutional support, and plant maintenance expenses. Expenditures for capital improvements, research, public service, off-campus instruction and auxiliary enterprises are usually excluded from both definitions. Most states that use the indexing method relate tuition to the cost of education with the justification that the additional costs do support instruction and, indeed, that the education being "purchased" includes these costs.

Should costs be determined at all institutions? In other words, are cost studies necessary at all institutions? The answer to this question is probably not. Smaller colleges usually lack the technical resources and expertise necessary to carry out the studies. As a result, a fairly common practice is to require major universities to complete the cost studies, and tuition at smaller institutions is then scaled to some percentage of the resulting university tuition. Some states may want to avoid cost studies altogether and use some measure, such as authorized budget figures, which may be less precise but is much less expensive to calculate.

A related question is, should the cost of education be computed by student level? Because of the difficulty of allocating costs by level, most states seem to have decided not to compute the cost differences by levels.

What percentage of costs should be passed on to students in the form of tuition? In 1973 the Carnegie Commission on Higher Education recommended that tuition be increased to equal one-third of educational costs. In that same year, the Committee for Economic Development recommended that one-half of educational costs be passed on to students. For the most part, it appears that these recommendations have had little national effect. We found no evidence that any state charges more than one-third of educational costs to its resident students. A recent study by the Western Interstate Commission for Higher Education (1980) revealed that "tuition in the four western states with established indexing policies ranges from 20 to 25 percent of costs for resident undergraduates" (p. 10). The Washington State Council for Post-secondary Education (1976b), when establishing the indexing policy currently used in that state, wrote that, "in no case have we found a definitive, uniformly accepted philosophic basis indicating the proportion of total costs which should be borne by the student or the taxpayer" (p. 40). Even where attempts are made to base charges on such principles, technical problems complicate the effort, as MacDonald (1977) points out:

> The rationale for tuition charges at a public institution is often based on the argument that individuals should pay for the portion of the benefits that accrue to each personally, while the public should pay for that portion which contributes to the social benefit of all. However, the art of defining, measuring, and allocating these benefits is not very advanced; given the complex nature of the products of educational endeavor, it is unlikely to ever be very precise. (p. 3)

Additionally, all involved in the process should recognize that although the use of an index relating tuition to a percentage of costs produces a uniform, and presumably reasonable, standard for annual or biennial tuition increases, those increases are likely to be reviewed and challenged by affected parties each year. States (Florida and Washington, for example) have sometimes lowered the dollar amount of tuition increases even when they were generated by use of an educational cost index.

Should the percentages charged vary by student level? Although conducting cost studies to yield data by student level is a technical problem familiar to most institutional researchers, differentiating the actual percentages to be charged by level is a philosophical one. In Higher Education: Who Pays? Who Benefits? Who Should Pay?, the Carnegie Commission (1973) recommended that "tuition should be more nearly proportional to costs, rather than regressive as against students at the lower levels" (p. 12). The Commission thus urged that graduate students be charged the same percentage of costs as undergraduates. But because graduate instructional costs tend to be greater, they recommended that the amount of tuition graduate students pay should be higher. This seems to be a position most policy makers embrace, but one which, as noted before, is difficult to implement because of the lack of practical methodologies for separating the undergraduate educational costs from graduate costs. Instead, some states have simply adopted a policy of determining undergraduate tuition and then charging graduate students at a specified, higher rate. Colorado, for example, sets graduate tuition at 105 percent of undergraduate charges, and in Washington graduate students are currently charged 115 percent of undergraduate tuition. The intent of the Carnegie Commission's recommendation is followed in such cases even if the recommended process is not.

The practice of charging different percentages of costs to upper and lower division undergraduates is uncommon. The pressure to reduce the percentage charged to lower division students could increase, however, as institutions adopt policies to encourage adult participation and to increase the access of economically disadvantaged groups because these groups are especially responsive to educational charges (Hyde, 1978). Available evidence suggests that costs per student, by level, do not differ significantly across institutional types (Johnson, 1979). Therefore, a uniform percentage of costs applied to different levels of undergraduate instruction would result in lower tuition for lower division students at both four-year and community colleges.

Should the percentage charged vary by student residency? Based on current practice, the answer to this question is clearly yes. In almost all states, whether indexing is used or not, nonresident students have traditionally been charged approximately 100 percent of the cost of education. Although this practice seems well entrenched, a period of increased competition for students might bring about some changes in this policy. Institutions, especially those experiencing enrollment losses, may be inclined to lower this percentage in order to attract additional out-of-state students. Clearly there is conflict between the desire to charge nonresidents the full cost of education and the desire to maintain current enrollment levels and diversity in the student body.

Should the percentage charged vary by type of institution? Although per student costs by level of instruction do not differ significantly across institutional types (e.g., two-year, four-year, university), there is a difference in the educational product being purchased. Thus, equity may not

be served by charging a uniform percentage across all institutional types. Additionally, as certain institutions lose enrollments, officials may try to distribute students to those institutions by lowering tuition. Although previous attempts to redistribute students through such adjustments have been notoriously unsuccessful, political pressures might well lead some states to try this approach again in the future.

Implications

Adoption of an indexing system for setting tuition implies that certain principles will be better served through such a policy. Clearly, state and institutional policy goals should be the starting point for determining the proportions to be used in an indexing approach. Student access, support for graduate education, and diversity of student bodies are all affected by tuition levels, and indexing tuition to educational costs can be one way in which state financial policy is made explicit. The percentages chosen should reflect consideration of fundamental policy issues, such as the relative costs, including foregone personal income. Current practice, however, rarely matches the ideal. In most states, the percentage of costs chosen is more likely to be a product of historical patterns, interstate comparisons, or current charges rather than of clear policy decisions.

Adoption of a policy that sets tuition by use of an index involves implications for a number of different constituencies with respect to planning, budgeting, and student enrollment:

State Budgeting. As total enrollments stabilize while costs continue to increase, will state appropriations make up the difference between tuition income and the requested budget? Or, will there be continued pressures to increase overall revenues from tuition? As we noted, the use of a constant

percentage index to set tuition will assure that annual increases in tuition will not be arbitrary. However, the same pressures that would drive up tuition charges in the absence of a formula, could also work to change the formula to yield more revenue. An indexing arrangement could be undone by price increases that are unacceptable to students and politicians. We have already seen several states adopt tuition increases lower than those generated by indexing formulas.

Institutional Autonomy. It appears that using an index reinforces the notion that tuition revenues are state funds--either general revenues or offsets to appropriations. The practical effect of this view is a reduction in institutional autonomy. Indexing tends to curtail institutional control over the amount of money generated from tuition and also to decrease budgetary flexibility in the use of these revenues at the campus level.

Cost Containment. Will higher education institutions be able to contain their real dollar expenditures in light of declining enrollments in order to stabilize their per student costs? Elementary and secondary schools have been unable to do this; higher education, with its high fixed costs, will probably not be able to either. Higher per student costs in an indexing arrangement will obviously result in increasing student charges. If students are sufficiently sensitive to price, these higher charges may put pressure on administrators to contain costs. Cost containment, however, will require programmatic and staffing cutbacks as well and these have not been easy to achieve in the past.

Impact on Enrollment. It is possible that if tuition is indexed to costs that are rapidly increasing, the resulting tuition increases may contribute to enrollment declines.

Cost Study Requirements. If states require extensive documentation, administrators will be burdened with the need to conduct annual studies to determine per student instructional or educational costs. As part of this process, they may be called upon to justify or explain differences among institutions. This would serve to politicize the process rather than to rationalize it.

Cost Behavior. Regardless of the procedures used, budget officials should be cognizant of the fact that the behavior of costs usually results in what we earlier called incremental pricing even in states that set tuition as a percentage of educational costs. Because costs are essentially a function of the dollars available to an institution in any given year, and because annual changes in educational costs tend to result from marginal additions, tuition changes generated by formula-driven computations turn out in the end to be incremental too.

Equity. If costing is to be used as a basis for setting tuition rates, how is equity for students at different institutions to be achieved? To set tuition at 25 percent of costs at one class of institutions and 20 percent of costs at another class for the purpose of creating price differences is to treat one group of students unequally based on their enrollment preferences. Policy makers should address these questions openly in enacting such policies.

Access. These considerations also bear heavily on issues relating to access for the economically disadvantaged, adult students, and those traditional students whose attendance patterns are influenced more by price than by curricula or selectivity. Unless financial aid is adjusted accordingly, these students may be deterred from enrolling at higher-priced campuses, which might impede efforts by those schools to increase their enrollment of minorities, adults, and other affected classes.

The use of a tuition index should be tied to a firm educational and social policy that meets the needs of individuals, institutions of higher education, and the state. To do so, however, requires concerted efforts by campus and state officials to reach agreement in areas that are often left unexamined. The simplicity of using a tuition formula is illusory, because it encompasses a wide range of issues and principles. While state policy makers must move beyond the view of tuition setting as only a fiscal matter to address some of the educational issues, educators must present a thorough examination of the issues and alternatives for examination. If a tuition index results from a careful discussion of its broad implications for access and finance, it can become a highly appropriate vehicle for implementing state policy.

Footnote

[1]For the purpose of this paper, tuition will be considered to be the basic comprehensive student charge used, along with state appropriations and other unrestricted institutional receipts, to fund activities relating to student instruction. These activities could include instruction, academic support, administration, student services, and plant operation. These charges may or may not be known as tuition and, in some states, may be general fund revenues.

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